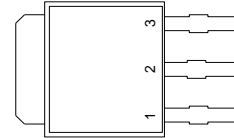
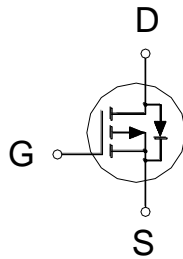


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	12mΩ	-55A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS	
Drain-Source Voltage	V_{DS}	-30	V	
Gate-Source Voltage	V_{GS}	±20	V	
Continuous Drain Current ²	I_D	T _C = 25 °C	A	
		T _C = 100 °C		-35
Pulsed Drain Current ¹	I_{DM}	-150		
Avalanche Current	I_{AS}	-38		
Avalanche Energy	L = 0.1mH	E_{AS}	72	mJ
Power Dissipation	T _C = 25 °C	P_D	62	W
	T _C = 100 °C		25	
Junction & Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 40A.

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	-1	-1.7	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 125\text{ °C}$			-10	

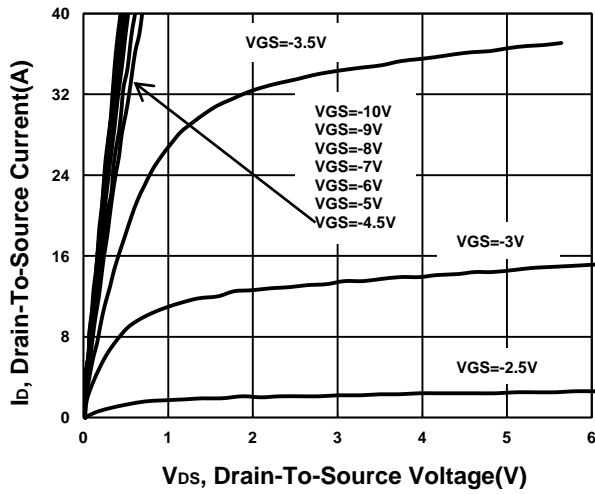
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -9A$	15.4	19	m Ω
		$V_{GS} = -10V, I_D = -12A$	9.8	12	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -5V, I_D = -12A$	31		S
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$	2740		pF
Output Capacitance	C_{oss}		376		
Reverse Transfer Capacitance	C_{rss}		321		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	2.6		Ω
Total Gate Charge ²	$Q_g (V_{GS}=10V)$	$V_{DS} = -15V, V_{GS} = -10V, I_D = -12A$	55		nC
	$Q_g (V_{GS}=4.5V)$		28		
Gate-Source Charge ²	Q_{gs}		8.7		
Gate-Drain Charge ²	Q_{gd}		13		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -15V, I_D \cong 12A, V_{GS} = -10V, R_{GEN} = 6\Omega$	15		nS
Rise Time ²	t_r		18		
Turn-Off Delay Time ²	$t_{d(off)}$		38		
Fall Time ²	t_f		22		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)					
Continuous Current ³	I_S			-51	A
Forward Voltage ¹	V_{SD}	$I_F = -12A, V_{GS} = 0V$		-1.2	V
Reverse Recovery Time	t_{rr}	$I_F = -12A, di_F/dt = 100A / \mu S$	20		nS
Reverse Recovery Charge	Q_{rr}		12		nC

¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

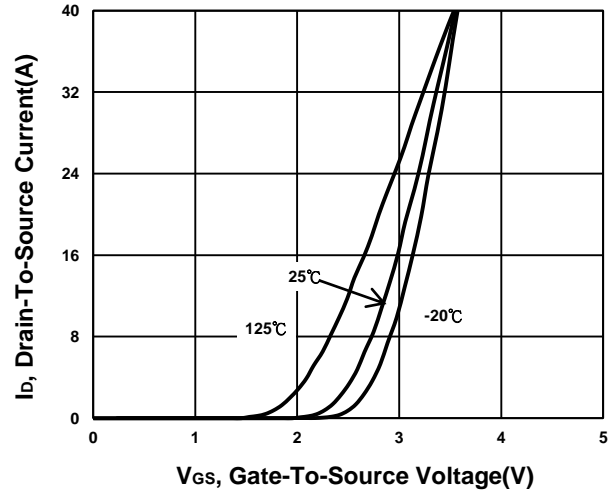
²Independent of operating temperature.

³Package limitation current is 40A.

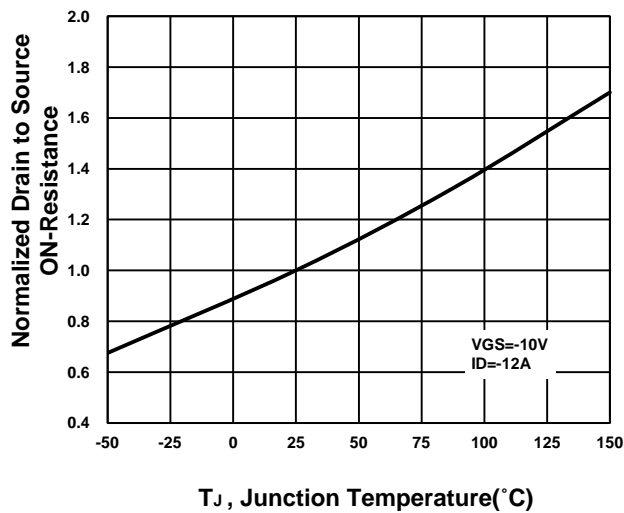
Output Characteristics



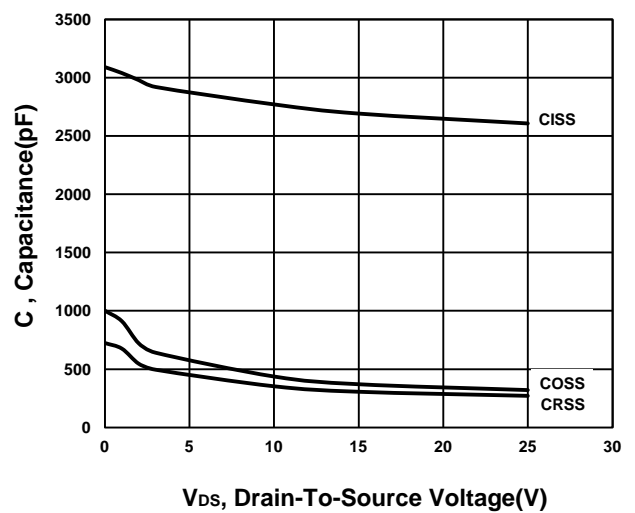
Transfer Characteristics



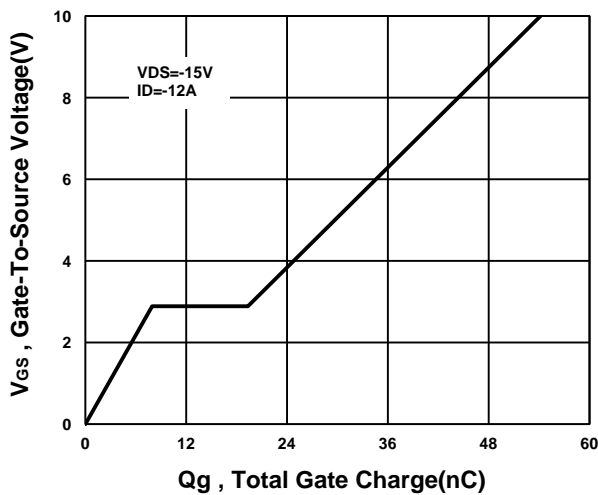
On-Resistance VS Temperature



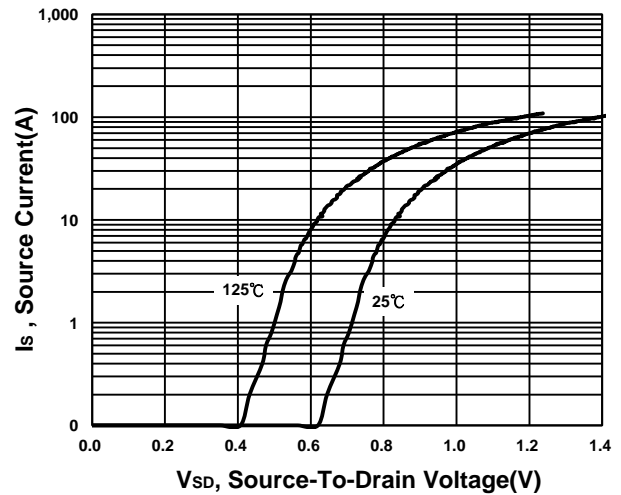
Capacitance Characteristic



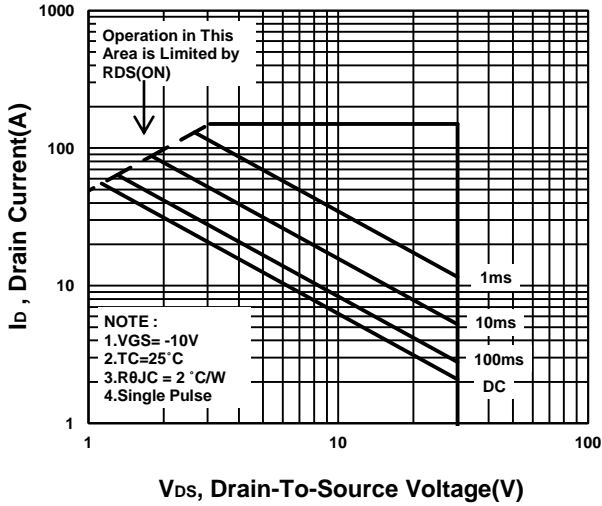
Gate charge Characteristics



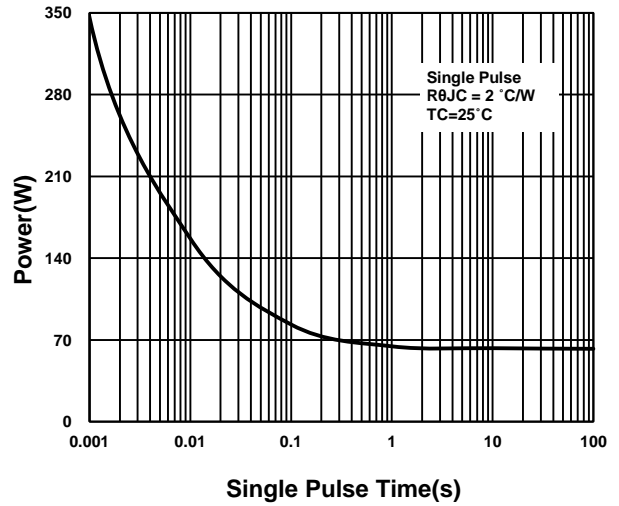
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

